SWOT Analysis Solutions for Developing the Banking Business Based on Relationships between the Banks Indicators

MIHAI ARISTOTEL UNGUREANU,
Accounting and Finance Department
Romanian American University,
1 B Expozitiei Blvd., sector 1, Bucharest
ROMANIA,
m_a_ungureanu@yahoo.com
OANA ELENA DOGARU,
Statistics and Econometrics Department,
Academy of Economic Studies Bucharest,
6 Piata Romana, sector 1, Bucharest,
ROMANIA,
DANIELA ŞERBAN,
Statistics and Econometrics Department,
Academy of Economic Studies Bucharest,
6 Piata Romana, sector 1, Bucharest
ROMANIA,
danielaserban2002@yahoo.com www.ds_minisite.com,
MIHAELA GRUIESCU,
IT, Statistics and Mathematics Department
Romanian American University,
1 B Expozitiei Blvd., sector 1, Bucharest
ROMANIA,
mgruiescu@yahoo.com

Abstract: - The theme of the present paper is the profitability and efficiency analysis of a bank on its belonging market. The paper aims to develop ideas and possible strategies in order to overcome the financial crisis that has happened in the last couple of years and the effects which are still felt. In order to achieve this, a bank's analysis has been conducted through quantitative methods. After completing the analyses, it was observed that a data analysis results summarizing was necessary in order to reach some measure, ideas and strategies to overcome the financial situation in this country. The better way to reach this was found to be through a SWOT analysis.

Key-Words: efficiency analysis, econometrical model, hypothesis testing, SWOT analysis, strategic measures, plan of action

1 Introduction

The Romanian banks have had a decrease in interest regarding the financing of the industrial sector but the service sector was viewed as one with great potential. The main financial indicators that have fluctuated between small intervals indicate a relatively stable market that has a great potential of growth in the long run. The SWOT analysis is a commonly used tool to facilitate a strategic review of a particular organization. Through this analysis, it were derived the typical four strategies, strengths-opportunities, strengths-threats, weaknesses-opportunities and weaknesses-threats, and it was discovered that the most suitable one is the latter, because the bank needs defensive tactics from the present until the future.

2 Problem Formulation

Carrying out an analysis using the SWOT framework helps to focus activities into areas where one is strong and where the greatest opportunities lie. This knowledge is then used to develop a plan of action. The analysis can be performed on a product, on a service, a company or even on an individual. Done properly, SWOT will give the big picture of the most important factors that influence survival and prosperity as well as a plan to act on. SWOT analysis is a tool for auditing an organization and its environment. It is the first stage of planning and helps marketers to focus on key issues. SWOT stands for strengths, weaknesses, opportunities, and threats. Strengths and weaknesses are internal factors. Opportunities and threats are external factors. SWOT analysis may also be used in pre-crisis planning and preventive crisis management. It may also be used in creating a recommendation during a viability study / survey. The purpose of SWOT analysis is to gather, analyze, and evaluate information and identify strategic options facing a community, organization, or individual at a given time.

SWOT Analysis is a tool which guides one to see where one stand in terms of job prospects and career growth[8]. To be able to develop it properly relationships between variables have been characterized with the help of econometrical models and statistical inference.

Multiple regression analysis considers the effects on the dependent variable behavior of adding one or more variables to the independent one. There will be occasions when the simple model, $y = b_0 + b_1x$, will not be considered satisfactory. This means that the simple linear model will not be a good enough predictor and the behavior of y is predicted according to its dependency upon two or many explanatory variables. Adding explanatory variables will increase the level of dependency and improve y predictions. For most analysis in business environment, we use regression models with more than two explanatory variables. This will lead to restriction in the data collection activity, becoming more difficult while the number of explanatory variable is increasing.

The general equation form is considered to be as per formula 17.

$$Y(x_1,x_2,...x_n) = b_1 + b_2x_2 + ... + b_nx_n + e \qquad (1)$$

For the samples that have a reduced volume (n≤30), the sampling distribution form of the mean depends on the distribution of the general population from which the sample is extracted. The t or Student distribution determines modifications in the test's formula, but also other different critical values. For a sample, we test a proportion with the formula:

$$t_{calculated} = \frac{p - \pi_0}{\sqrt{\frac{\pi_0(100 - \pi_0)}{n}}}, \qquad (2)$$

with n-1 degrees of freedom, where n is the volume of the sample, or the number of gathered data for the computation of proportion. The statistical test for significance hypotheses testing is held as an usual hypothesis test with its particular steps, the only difference being the fact that $t_{critical}$ is taken out of a given table, a preestablished one by international standards. The assumption that has to be made is that the general population is normal or aproximately normal distributed, according to Gauss' bell. However, because hypothesis test are based on sample information, it exists the possibility of errors.

3 Problem Solution. Analysing Relationships between variables

First, the simple linear regression model is to be taken into consideration. The population is formed of 8 years, from 2003 up to 2010, included, therefore no sample was withdrawn, the regression was performed on the entire population of years based on official financial data declared by ProCredit bank. The independent variable has been chosen as the number of branched and outlets and the dependent variable, the number of staff. This was done in order to see what impact has the number of existing branches and outlets in the

ISBN: 978-1-61804-043-5

total number of employees, or, in other words, what contribution has the number of functional braches and outlets has on employing or deploying personnel. The following notations have been used: Number of staff = y, the dependent variable and Number of branches and outlets = x, the independent variable.

Therefore, the relation y = f(x) + error, will transform into the relationship:

Number of staff = f(Number of branches and outlets) + error.

The simple linear regression model is:

Number of staff = 25.3935 + 24.5701*Number of branches and outlet + 80.7463 (3)

The population regression line is:

E(number of $staff_i$ | number of branches and $outlets_i$) =25.3935 + 24.5701*Number of branches and $outlets_i$, with $i = \overline{1,7}$. (4)

Because β_0=25.3935, it can be stated that the number of staff outside the branches and outlets is on average 25.3935 persons and because β1=24.5701, it can be stated the fact that there is a positive direct relation between the two variables, so that if the number of branches and outlets increases by one unit, the number of staff will increase with 24.5 persons. The value of multiple R – coefficient of correlation, of 0.9766 shows a strong positive correlation between the independent and the dependent variables (0.9766 is higher than 0.75). The R square, coefficient of determination, takes the value 0.9539, which means that 95.39% of the variation in the dependent variable y, the number of staff is due to the variation in the independent variable x, the number of branches and outlets, without other influencing factors. If it is to be taken into consideration other factors, for an accurate analysis it is used the value of adjusted R square of 0.9462, meaning that 94.62% of the variation in the number of staff is due to the variation in the number of branches and outlets, along with other factors of influence. The above constructed model is a valid one, taking in account the value of significance F, 0.00003, which is smaller than the chosen confidence interval α=5% (α=0.05). In addition, a multiple regression model was constructed and analyzed for the same period of eight years, the interval 2003-2010. This time, the variables were selected taking into consideration the bank's most important figure, the gross loan portfolio. Therefore, the dependent variable y is the gross loan portfolio and the independent variables are as following: business loan portfolio x_1, agricultural loan portfolio x_2, housing loan portfolio x_3 and other loans portfolio x_4. The relation between the variables y = $f(x_1) + f(x_2) + f(x_3) + f(x_4)$ + error, is transformed into the next relationship (see formula 5).

Gross Loan Portfolio = -651.2261 + 0.8759*Business Loan Portfolio + 1.2516*Agricultural Loan Portfolio + 1.4297*Housing Loan Portfolio + 2.2331*Other Loan Portfolio + 1160.6415. (5)

Because the population is small, of eight years, the regression was performed on the entire population, not on any sample, and the regression equation line is:

⇒ $E(y_i|x_i)$ = -651.2261 + 0.8759*Business loans + 1.2516*Agricultural loans + 1.4297*Housing loans + 2.2331*Other loans, with $i = \overline{1,7}$. (6)

Given β_0= -651.2261, the gross loan portfolio is on average -651.2261 Euros if there are no other loans. Because β_1=0.8759, β_2=1.2516, β_3=1.4297, and β_4=2.2331, it can be concluded the fact that a unit change in each of the independent variables, business loan portfolio, agricultural loan portfolio, housing loan portfolio and other loans portfolio, will result in increases of 0.8759, 1.2516, 1.4297 and, respectively, 2.2331 units in the gross loan portfolio. Moreover, the multiple R takes the value 0.9999, meaning that there is strong positive correlation between the dependent and independent variables, almost perfect (0.9999 is higher than 0.75). The R square value is 0.9998 meaning that 99.98% of the overall variation in the gross loan portfolio is due to the variation in business, agricultural, housing and other loans portfolios, without taking into account other influencing factors. It will be analyzed the value of adjusted R square, namely 0.9997, describing a 99.97% variation in the dependent variable due to the variations in the independent variables, and taking into consideration the other influencing factors. The multiple regression model above constructed has a significance F value of 0.00021 which is smaller than the value of the confidence interval selected α=0.05 (or 5%), verifying that this is also a valid model. In order to make a complex econometric analysis, a significance t-test was conducted on an extracurricular variable, chosen because its relation to ProCredit Bank's variables and because it was desired that the paper should be more diversified.

Therefore, the test was conducted on the market share of ProCredit Bank on the Romanian banking sector. It was extracted from an article[9], regarding the activity and the market share of ProCredit Bank, that in 2006 Mr. Michael Kowalski said that the bank's market share was of 0.4%. The number of banks active on the Romanian banking sector, during that year, was 36, among which 18 of them had the market share under 1%. The manager sustained the fact that ProCredit Bank's market share is expected to increase, up to 0.7%. The Student test evolved as following: n = 36 banks; n' = 18 banks. Defining the set of hypotheses and the confidence interval and the number of degrees of freedom: α = 0.05 (or 5%) df = 36-1=35:

$$\begin{cases} H_0 : \mu = 0.4\% \\ H_1 : \mu > 0.4\% \end{cases}$$

We determine the proportion $p = \frac{n'}{n} * 100\% = \frac{18}{36} * 100\% = 50\%$, $t_{critical}$=1.697 and calculate the test value as 5.95. Because $t_{calculated}=5.95>1.697 = t_{critical} \in$ Rejection Region, RR, defined by the interval (1.697, +∞). So there is enough evidence to reject H_0 and therefore, accept H_1, in 95% of the cases. We can conclude that in 95%, the manager is right, he can be certain that the market share of ProCredit Bank will increase from 0.4%.

4 Conclusion. Developing the SWOT analysis based on the identified relationships between the bank activity indicators

Strategy from SWOT analysis can be among the following ones: build on the organization's strengths; recognize weaknesses and correct, where possible; take advantage of opportunities, this is what drives the strategy; recognize threats to the organization and take steps to minimize the effects. The strategy led further to a proposal of diversification for the bank, a related one, consisting of new product introduction, followed by another possibility that could be taken into consideration. Finally, there were made more observations regarding the results and future trends of the most important elements of the bank. Society evolution in general, economic situation at global level, as well as all major problems which human kind deals with today impose the identification of viable solutions meant to resolve its problems. It is because of these problems that this research was conducted, primarily, and then derived from it a SWOT analysis. This SWOT (strengths-weaknesses-opportunities-threats) analysis is actually data analysis results summarized.

STRENGTHS . ProCredit Bank is a commercial bank with a Board of Directors, that can attract good business to the Bank as it consists of successful & respected business people with a good mix of expertise in key industries and with strong social links in the country. Approval of loans is faster with a local Board. Most of the staff are young, have the requisite capabilities, and are re-trainable for newer systems and technology. Staff is local, very well known and have good contact with all sectors of the community. The network of branches and outlets affords customers service from any point within the state as the computer mainframe is accessible from all branches. The bank is in the local competition in SME' loans, and its core banking system has the capacity for further advancements. Customers prefer to open accounts at ProCredit Bank because statements and account information are produced faster than their competitors.

The strong network of regional and international correspondent relationships places the bank in an advantageous position in the execution of foreign exchange business.
It is an advantage for ProCredit Bank to have the largest customer base as customers may encourage others to use its services. The bank's strengths are also high client retention, higher than average checking account balances, high-yield bond rates, a user-friendly website, product line diversification, low staff turnover and low overhead

WEAKNESSES. The lack of exposure for the staff as a result of the poor customer mix makes it difficult for the staff to be as experienced and equipped as most of their competitors to deliver services efficiently and maintain high standards of service. Their international competitors, the other commercial banks, are better prepared to stay afloat in the face of strong competition with research

ISBN: 978-1-61804-043-5

departments and qualified staff to keep their institutions in line with legal, technological, operational and other changes. The bank is totally reliant on its correspondent banking relationships to conduct its foreign exchange business and may find it impossible to survive against its international competitors if its correspondent banks should close such relationships. The bank's weaknesses are also low customer satisfaction, poor website features, low staff morale, high loan rates, low brand recognition or a minimal product line.

OPPORTUNITIES. The bank is very well placed with a good and assured customer base from the level of the government and the public sector business. The availability of modern telecommunication systems and technology facilitates the improvement and strengthening of the bank's international business and ATM services, and the development of new services, as telephone banking. The increased access to computers by customers will allow the bank to reach more target groups through electronic communication. The tourism industry is growing - new international airport coming, hotel industry developing, new foreign investors - which should introduce more capital into the country and should spawn employment opportunities for locals.

The political stability and the economic growth across the member countries of the EU, including our country, insures the stability of the euro, and this is an encouragement for persons returning home to invest locally.

The population that is mostly young comprises a strong workforce capable of advancing the Government's developmental plans to take the country's forward. The bank's opportunities are also growing economy, new high-yield investment products, banking deregulation, less competitors in the marketplace or an increase in the average savings rate.

THREATS. Some customers (the SME owners) prefer to do business with their competitors because political interference or changes often affect their confidence in the bank. ProCredit Bank may be unable to attract certain customers because there is the perception that their account information is open to the Government and its agencies. There is increased competition from the non-blank financial sector, the credit unions, the savings & loans bank, the building & loans association and the insurance companies. These institutions are not regulated by Central bank and hence they are not restricted in their operations. They have been paying very high rates on deposits and have also been offering more and more of the services which were traditionally offered by commercial banks. The EU will present other investment opportunities to customers and could reduce the bank's deposits, as well as its chance to raise additional deposits. The bank's threats are also declining economy, increased capital gains taxes, more competitors in the marketplace, high unemployment or an increase in insurance rates.

The SWOT Matrix is an important matching tool that helps managers develop four types of strategies. Matching key external and internal factors is the most difficult part and requires a good judgment – there is no best set of matches. The types are SO strategies use a firm's internal strengths to take advantage of external opportunities, WO strategies aim at improving internal weaknesses by taking advantage of external opportunities, ST strategies use a firm's strengths to avoid or reduce the impact of external threats, and WT strategies are defensive tactics directed at reducing internal weaknesses and avoiding external threats.

Giving the times that the bank has went through, it is the author's belief that the most appropriate strategy for ProCredit Bank is derived from the WT strategies. The bank could lower the prices for the loans, meaning to lower the interest rates, increasing the payment periods, reducing the quantity of papers required for a loan; it could also pay more attention and invest more in the research and development field, meaning that it should research viability of entering other foreign markets, because they are not active in northern- and western-Europe, Asia, north-Americas, northern-Africa and Middle-East. The most adequate tactics for this type of strategy are the defensive one. Together with a diversification strategy, can make a perfect effective combination. Retrenchment is one defensive strategy that is most suitable in this moment for the bank. Retrenchment occurs when an organization regroups through costs and asset reduction to reverse reduction of sales and profits. During this period, the strategists work with limited resources and under a lot of pressure. This strategy is effective when an organization has clearly distinctive competence, but has failed to meet its objectives, which can be confirmed for the bank given the last years of declining, along with the plague of inefficiency in some fields (like shareholder's equity, economic return). If retrenchment fails, or is not sufficient enough, the bank could proceed to the next strategy, which is divestiture. Selling a division or a part of an organization is called divestiture. This is often used to raise capital for further strategic acquisitions or investments. It can be part of an overall retrenchment strategy to rid the bank of businesses that are unprofitable or require too much capital. These strategies could be used in order to overcome and reduce, if not avoid, the effects of the declining economy in which the bank still is (one of the threats)

References:

[1] Anderson, D.R., Sweeney, D.J., Williams, T.A., Freeman, J., Shoesmith, E., *Statistics for Business and Economics*, Thomson Learning High Holborn House, 2007

[2] Barrow, M., *Statistics for Economics, Accounting and Business Studies,* Pearson Education Limited, 2006

[3] Bratianu, C., Vasilache, S., *Business Management,* ASE Printing House, 2006

[4] Brooks, C., *Introductory Econometrics for Finance* 2nd ed., Cambridge University Press, 2008

[5] Eakins, S., Mishkin, F., *Financial Markets and Institutions*, Pearson/Prentice Hall, 2009

[6] Mishkin, F., *Economics of Money, Banking and Financial Markets* 9th ed., Prentice Hall, 2009

[7] Waters, D., *Quantitative Methods for Business* 3rd ed. England Pearson Education Limited, 2001

[8] SWOT Analysis – www.wisegeek.com/what-is-swot-analysis.htm accessed at June 20, 2011

[9] Andreea Ciobanu, Intercapital Invest, Obligatiuni ProCredit – www.kmarket.ro/rapoarte/obigatiuniprocredit.pdf accessed at June 26, 2011

ISBN: 978-1-61804-043-5